

## Joint ICTP-IAEA Workshop on Advanced Synchrotron Radiation based X- ray Spectrometry Techniques

22 - 26 April 2013

*ICTP, Miramare - Trieste, Italy*

The Abdus Salam International Centre for Theoretical Physics (ICTP) organizes a *Workshop on X-Ray Spectrometry*, to be held at the ICTP in Trieste, from 22 to 26 April 2013.

Synchrotron Radiation (SR), thanks to its unique properties, has been utilized and exploited over the past decades as a valuable analytical tool in a variety of scientific disciplines. In particular, there has been a growing demand in recent years for advanced characterization of materials, an application of SR that requires improved experimental and analytical methodologies in X-ray spectrometry as well as upgraded X-ray instrumentation. To address this demand, the workshop will provide an overview of the state-of-the-art as well as current and future developments in Synchrotron Radiation (SR) based X-Ray Spectrometry (XRS) techniques. This knowledge is aimed at giving participants a better understanding and appreciation of the possible applications of X-ray Spectrometry in research, and also to strengthen the success of beam time proposal applications. Particular emphasis will be given to analytical XRS applications in materials science, nano-electronics, environmental sciences and biology. Opportunities presented by the X-Ray Fluorescence (XRF) beamline at Elettra, Sincrotrone Trieste and also the upcoming IAEA end-station will be discussed with the objective to stimulate the creation of a user community.

The following specific topics will be included:

- Trends and Developments in SR and X-ray spectrometry Instrumentation
- 2D and 3D XRF elemental analysis and imaging. Standard-less quantification and Analytical Applications
- Grazing Incidence and Total Reflection X-Ray Fluorescence Analysis (GIXRF-TXRF).
- X-ray Absorption and Emission Spectroscopy techniques
- Software for quantitative XRF and GIXRF analysis

*Scientists and Ph.D. students from all countries that are members of the UN, UNESCO or IAEA can attend the Workshop. Although the main purpose of the Centre is to help researchers from developing countries through a programme of training activities within a framework of international co-operation, a limited number of strongly motivated graduate student and post-doctoral scientists from developed countries are also welcome to attend. Limited funds are available for some applicants from developing countries, to be selected by the organizers. Such financial support is available only to those who attend the entire workshop. Every effort should be made by candidates to secure support for their fares (or at least half-fare) from their home country. **There is no registration fee for attending the Workshop.***

The online application form for this Workshop is available at:

[http://cdsagenda5.ictp.trieste.it/full\\_display.php?smr=0&ida=a12176](http://cdsagenda5.ictp.trieste.it/full_display.php?smr=0&ida=a12176)

The closing date for receipt of applications is 12 January 2013.

Workshop Secretariat (smr2454)  
c/o Elizabeth Brancaccio  
The Abdus Salam International Centre for Theoretical Physics  
Strada Costiera 11  
34151 Trieste, Italy

### Director:

**Andreas G. Karydas**  
(IAEA, Vienna)

### Co-Directors:

**Burkhard Beckhoff**  
(PTB, Berlin)

**Diane Eichert**  
(ELETTRA, Trieste)

### Local Organizer:

**J. Niemela**  
(ICTP, Trieste)

### DEADLINE:

**12 January 2013**